

# Erosion Prevention & Sediment Control



*Shirt Pocket  
Field Guide*



— MARION COUNTY —  
**SOIL AND WATER**  
— CONSERVATION DISTRICT —

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## Purpose & Summary

This field guide is to be used as a quick reference guide for those working on construction sites. Contained within the guide are the most commonly used erosion and sediment control practices in central Indiana. More detailed information can be found in the Indiana Storm Water Quality Manual:

[www.in.gov/idem/stormwater/2363.htm](http://www.in.gov/idem/stormwater/2363.htm)



Sediment is the most prevalent pollutant in Indiana's surface waters by volume. Active construction sites are especially at risk for adding to that pollution due to the amount of disturbed soils and long duration of projects. Implementing and maintaining practices outlined within the **Storm Water Pollution Prevention Plan (SWPPP)** for your site will ensure compliance with state and local laws.

## Best Management Practices (BMPs)

Most practices in this guide should be implemented **before land disturbing activity begins** or as soon as practically possible. The sequence within your SWPPP should guide the installation of practices. Practices implemented in will likely need maintained throughout the project and should be inspected and repaired on a regular basis. All practices should remain until the site has achieved 70% uniform vegetative cover.



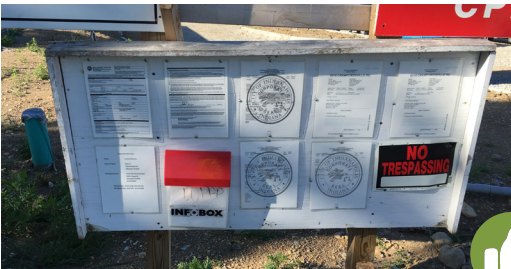
## Implementing your SWPPP

Get to know your site by walking or driving the entire site before construction starts. Identify on-site or adjacent water features that may need extra protections. Remember, your SWPPP is a working document and changes can and should be made when field conditions demand it. Always consult with the designer before making changes to your SWPPP. You are required to modify the SWPPP and practices to keep sediment from leaving the site as field conditions warrant.

## Staging Area



- Install a posting at or near the job site entrance that contains:
  - A copy of the Notice of Intent (NOI)
  - Contact information for a superintendent, project manager or inspector that is on-site
  - A copy of the construction plans or the location they can be found
- Secure port-a-lets to the ground and ensure they are placed away from waterways or inlets.
- Fuel should be stored in a double walled tank or have secondary containment.
- Provide storage for fuels, chemicals, oils and other potential pollutants.



## Stone Construction Entrance



- Stone construction entrances reduce sediment tracked out onto adjacent roadways.
- Install geotextile fabric below the entrance to reduce maintenance needs.
- The minimum size is 20 feet in width by 50 feet in length, but this should be increased depending upon the amount and size of construction traffic.
- The minimum depth of stone is 8 inches. (#2 stone is recommended)
- Additional measures like street sweeping or wheel washes may be needed depending on conditions.





## Concrete Washout



- Concrete waste has a very high pH; if this material makes it off-site into a waterway, it may cause fish kills.
- Vegetation will not grow well in soil contaminated with concrete waste.
- Install a washout as a dumpster, excavated pit or with sandbag or straw bale perimeters.
- Concrete washouts must be lined with a single sheet of plastic (minimum 10 millimeters).
- Straw bales or sandbags should be staked down.
- Refrain from placing large pieces of concrete or other construction materials in the concrete washout, as they will rip the liner and leave it ineffective.



## Silt Fence



- Silt fence is used to intercept sheet flow and allow water to slow and pond, causing larger particles to settle out.
- Silt fence should be installed on the contour, it will almost always fail when placed in a concentrated flow.
- Ensure ends of the fence are joined by wrapping posts around one another.
- Silt fence should be entrenched and backfilled.
- End sections should be pointed towards flow to reduce bypass and erosion.
- Remove deposited sediment once it reaches half the height of the fence.





## Sediment Logs/Waddles



- Sediment logs/waddles are used to intercept sheet flow or concentrated flows and allow water to slow and pond, causing larger particles of soil to settle out.
- Can be used as perimeter controls or as a modified check structure within a concentrated flow.
- To install: excavate a shallow trench, overlap ends, and stake sediment logs/waddles.
- Remove sediment once it reaches one fourth the height of the practice.



## Rock Horseshoe Dam



- The rock horseshoe dam will intercept concentrated flows and allow water to slow and pond, causing larger particles of soil to settle out.
- Rock horseshoe dams can be used to protect culverts or flared inlet pipes.
- Riprap should form the donut structure, with #8 filter stone on upstream face.
- Side slopes should 2:1 or flatter.
- Remove sediment once it reaches half the height of the practice.



## Temporary Seeding



- Temporary seeding ensures bare areas do not erode and will reduce maintenance needs on sediment control practices.
- Temporary stabilization is required on unvegetated areas that are scheduled or likely to be inactive for 15 days.
- Seed, mulch and appropriate fertilizer should be used to ensure adequate vegetative growth.
- Seed types, rates and timetables should be included in your SWPPP. Dormant seeding should be used in colder winter months.



## Check Dams



- Check dams reduce the velocity of water flowing through a channel.
- Filter fabric should be installed between the ground and rip rap.
- The maximum height is 2 feet, and the middle of the check should be lower to act as a spillway.
- Side slopes should be 2:1 or flatter.
- #5 or #8 filter stone should be installed on the upstream side of the dam.
- Check dams should be spaced toe to crest.
- Remove accumulated sediment once it reaches half the height of the practice.



## Inlet Protection



- Inlet protections slow sediment-laden water and allow it to pool behind the protection, which allows larger sediment particles to settle out.
- Protections must not impede traffic, be maintainable without dropping sediment into the structure and should have an overflow.
- Do not use filter fabric below the grate as an inlet protection.
- Silt fence inlet protections must be cross braced.
- Maintain inlet protections when sediment accumulates to half the height of the protection.
- Inlet protections should be maintained after every rain event.



## Dewatering



- Dewatering filters sediment-laden water that is being pumped off-site.
- Filter bags should be used and placed on a stable surface – grass, stone pad.
- Filter bags should have secondary containment (silt fence, waddles, check structure), in case the bag busts or the hose comes loose.
- Ensure filtered water will not flow through another unstable area.
- Replace bags when full and maintain secondary containment when sediment reaches half the height of the practice.





## Outlet Protection



- Stone is used to protect the channel from erosion at the outlet pipe.
- Install outlet protection when pipe is installed.
- Size the stone for the anticipated velocity and flow.
- Other turf reinforcement products or pavers can be used.



## Permanent Seeding and Sodding



- Add 4-6 inches of topsoil to ensure adequate vegetative growth.
- Seed, mulch and appropriate fertilizer should be utilized to ensure adequate vegetative growth.
- Seed types, rates and timetables should be included in your SWPPP.
- Inspect and repair any eroded or bare areas
- 70 percent uniform vegetative cover is required to terminate your project.



## Erosion Control Blanket



- Erosion control blankets provide immediate stabilization of the soil.
- This is especially useful in concentrated flows where seed and mulch may be easily displaced.
- Blankets must be secured with staples or stakes.
- To reduce maintenance, ensure these are installed with the direction of flow, rolled down the slope or with the direction of flow in a channel.
- Inspect for erosion and adequate vegetative growth.



## Site Inspections



- Inspections must be completed weekly and after 0.5-inch rainfall events.
- Inspection forms must be completed and kept on-site, as they can be requested by the inspecting authority.
- Follow up on maintenance issues found during inspections.
- Reoccurring problem areas may require changes to your SWPPP.

## Job Completion



The Notice of Termination (NOT) cannot be filed until:

- All land disturbing activities, including all individual or out lots, have been completed and stabilized.
- All temporary erosion and sediment control measures have been removed.
- Local MS4's may have a final inspection requirement.
- There is 70% uniform vegetative cover throughout the site.

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Information gathered from the 'Indiana Storm Water Manual' and John South's "Shirt Pocket Field Guide", *Hoosier Heartland RC&D*.

All photos taken by Cheyenne Hoffa.

## Helpful Links & More Information:

Soil and Water Conservation Districts:  
<http://wordpress.iaswcd.org/contact-your-local-swcd/>

IDEM Stormwater Permitting:  
<https://www.in.gov/idem/stormwater/2331.htm>

IDEM Stormwater Manual:  
<https://www.in.gov/idem/stormwater/2363.htm>

Hazardous Spills:  
(888) 233-7745 or (317) 233-7745

EPA NPDES Storm Water Program:  
<https://www.epa.gov/npdes/stormwater-discharges-construction-activities>



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